

## Simple measures can yield big greenhouse gas cuts, scientists say

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New technologies and policies that save energy, remove atmospheric carbon and limit greenhouse gas emissions are needed to fight global climate change - but face daunting technological, economic and political hurdles, a Michigan State University scientist said.

The good news: Basic actions taken by everyday people can yield fast savings at low cost, according to MSU Professor Thomas Dietz and colleagues.

Cutting consumer energy waste is a good place to start, said Dietz, a professor of sociology and environmental science and policy at MSU. Household energy consumption accounts for 38 percent of carbon emissions in the United States and 8 percent of world emissions, he said.

Activities such as home weatherization, routine vehicle maintenance and opting for the clothesline instead of the dryer could cut total U.S. carbon emissions by 5 percent over just five years and 7.4 percent in 10 years, Dietz said. That's the equivalent of France's total carbon output, or of total emissions by the U.S. petroleum refining, steel and aluminum industries.

"On the research end of things, we've invested mostly in engineering approaches -- building better technology," said Dietz, who is MSU's assistant vice president for environmental research. "But the best technology we can devise doesn't do any good if people don't use it. We can make great progress with the technologies we already have if we pay

attention to behavior -- how people use the technologies they already have."

Dietz and collaborators, writing in this week's [Proceedings of the National Academy of Sciences](#), didn't base their estimates on a best-case consumer behavior scenario. Instead, they used the best available information to calculate how many families could reasonably be expected to take such measures if they were provided information, offered financial assistance and could interact with others doing so.

They excluded potential emissions cuts from emerging technologies and from wholesale lifestyle changes, so their estimates are at the low end of potential greenhouse gas reductions, Dietz said.

"I've seen many analyses that make wild assumptions about how hard or how easy it is to get people to change their behavior, without any basis in science," he said. "Our analysis is based on science. We look at what has been feasible in bringing about changes in [energy consumption](#) behavior."

The conservation measures the researchers analyzed have the added benefit of a "demonstration effect," Dietz said. That is, when people adopt the changes, their acquaintances are likely to do the same.

"We know from a lot of research that most people, companies and governments are most likely to change behavior when they see their peers change. So someone will weatherize their houses when they see others do it, and governments are most likely to develop policies when they see other governments doing it."

The researchers' insights could have implications for the international community as it approaches the United Nations' December climate talks in Copenhagen.

Source: Michigan State University ([news](#) : [web](#))

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